

Antenna Specification for BT

1. Antenna Characteristic Specification

This specification describes the physical characteristics and electrical performance of the following 2.4 GHz Bluetooth antenna.

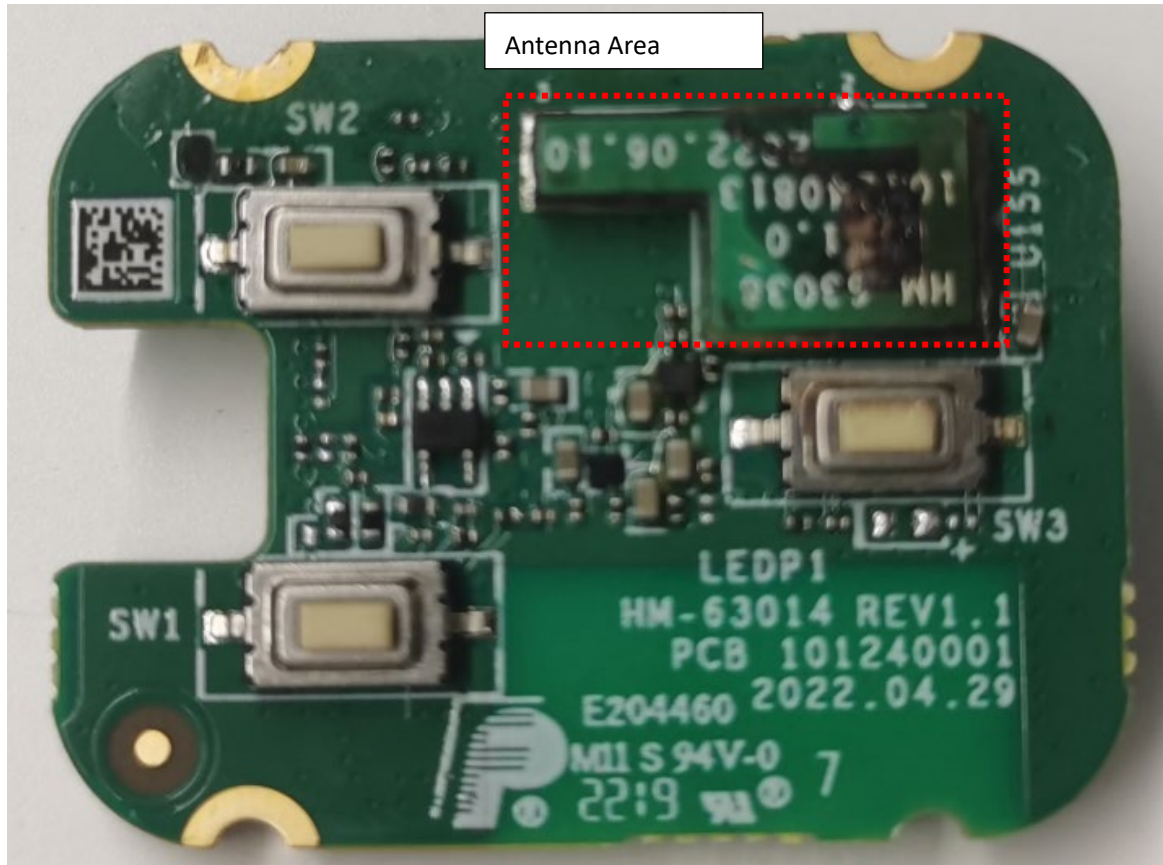


Figure 1. Antenna Actual Effect Picture

1.1 Antenna Structure

The antenna is mainly composed of on-board wiring on the PCB.

1.2 Antenna Technical Parameters and Interface

Design Specifications	Typical	Units
Antenna Type	PCB	\
Frequency	2400-2500	MHz
Gain	High channel: -19.38	dBi
	Medium channel: -17.65	dBi
	Low channel: -17.47	dBi
Antenna Efficiency	37	%
VSWR	< 10	\
Polarization	Linear Polarization	\

Axial Ratio	\	\
Radiation pattern	Omnibearing	\
impedance	50	ohm
Power handling	33	dBm
Interface	\	\
Overall dimensions	5mm*2mm	\
Weight	\	\
Operation Temp.	-30-70	°C
Storing Temp.	-30-70	°C

2. Antenna Test Conditions

2.1 Test Equipment

Antenna Vector Network Analyzer ROHDE&SCHWARZ ZNB 20

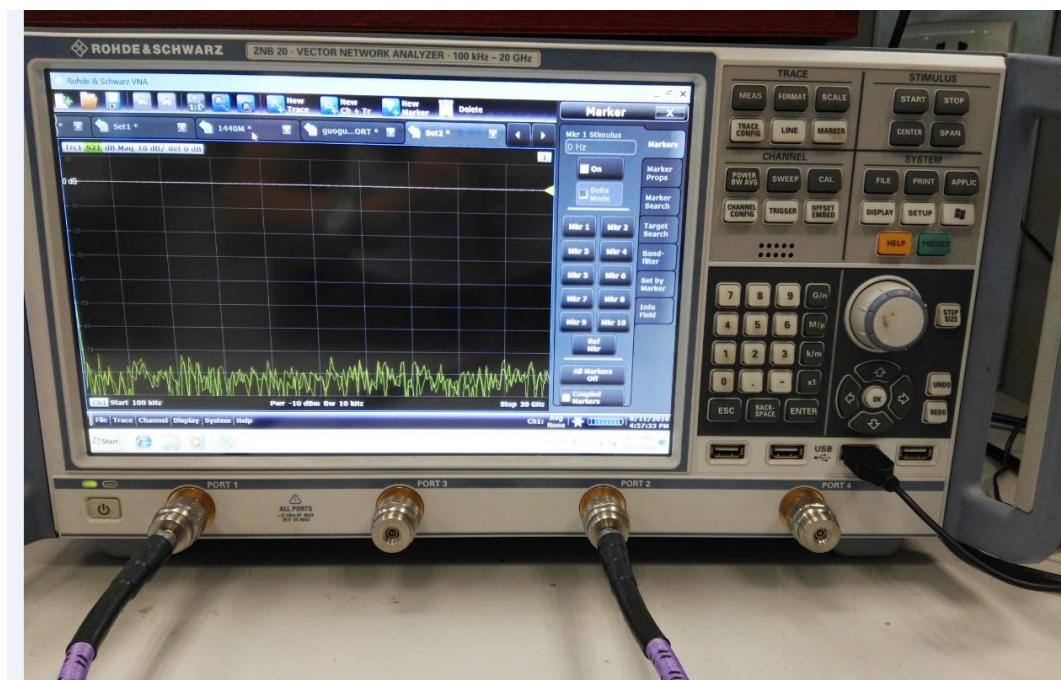


Figure 2.Vector Network Analyzer

2.2 Test Result

Return Loss (S11)

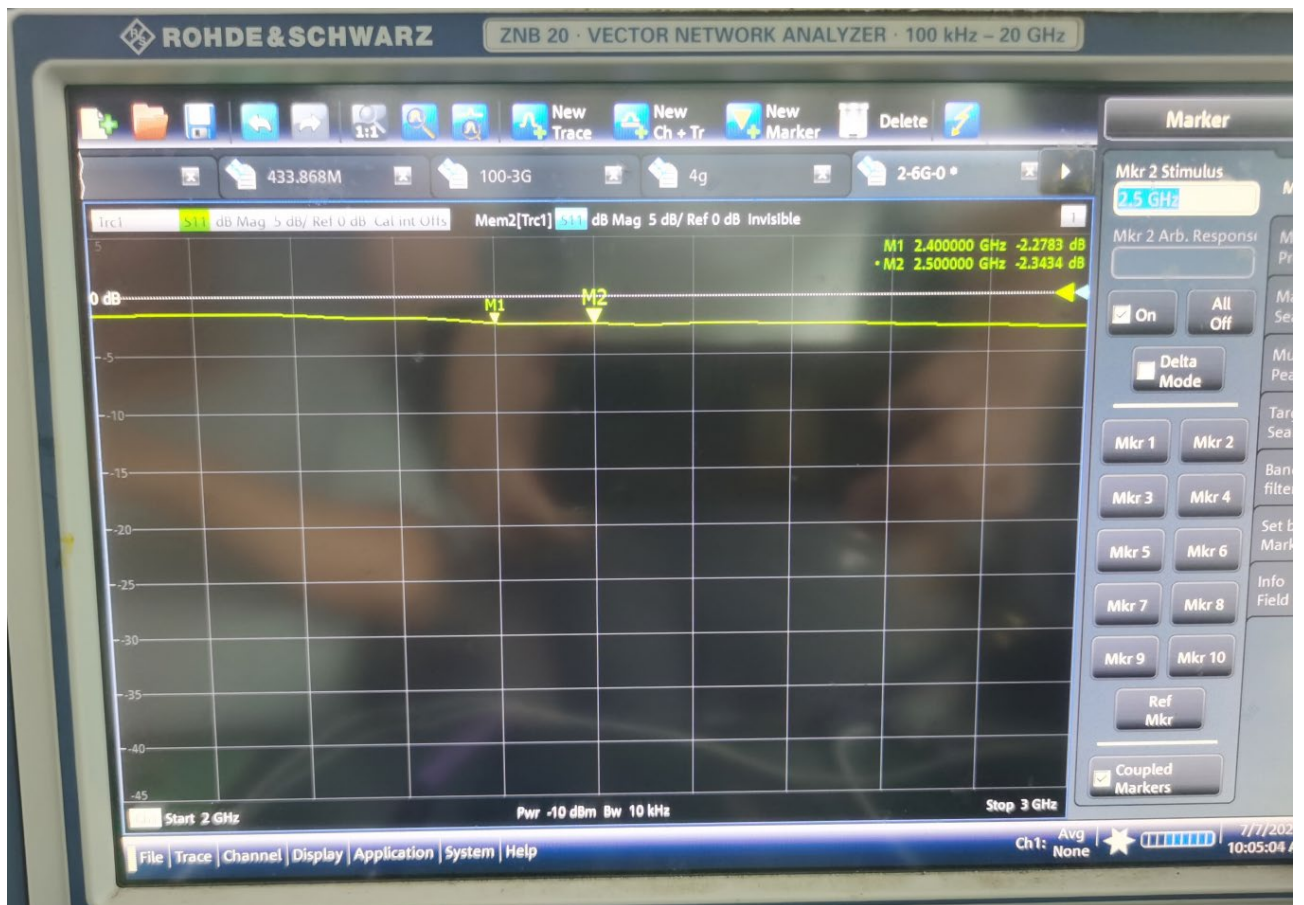


Figure 4.Return Loss

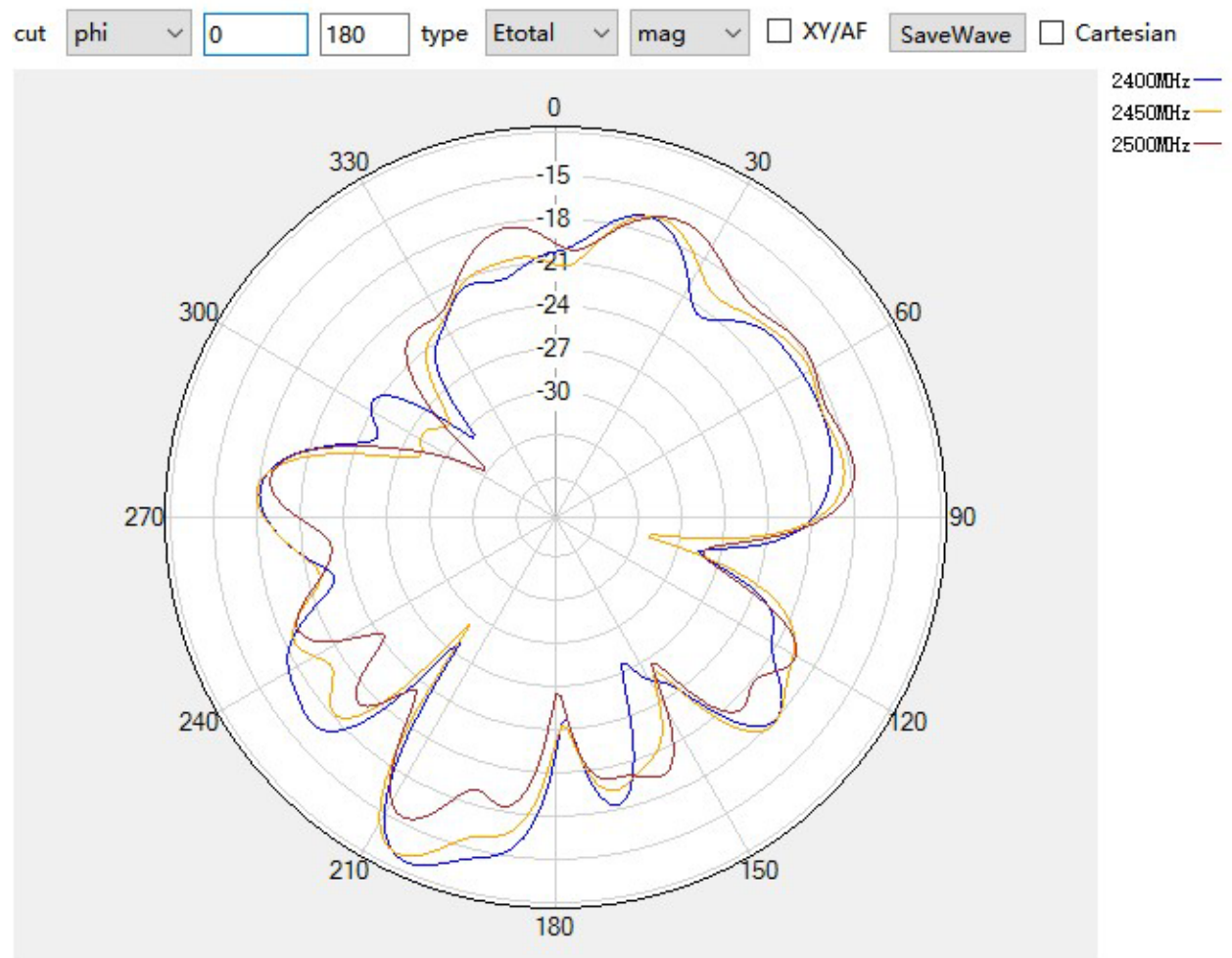
The yellow curve in the figure above shows that the antenna syntonny is realized well, and the resistance condition matches well.

Antenna Efficiency

Frequency /MHz	Efficiency /%
2400	1.15
2410	1.18
2420	1.17
2430	1.16
2440	1.21
2450	1.16
2460	1.15
2470	1.13
2480	1.11
2490	1.06
2500	1.09

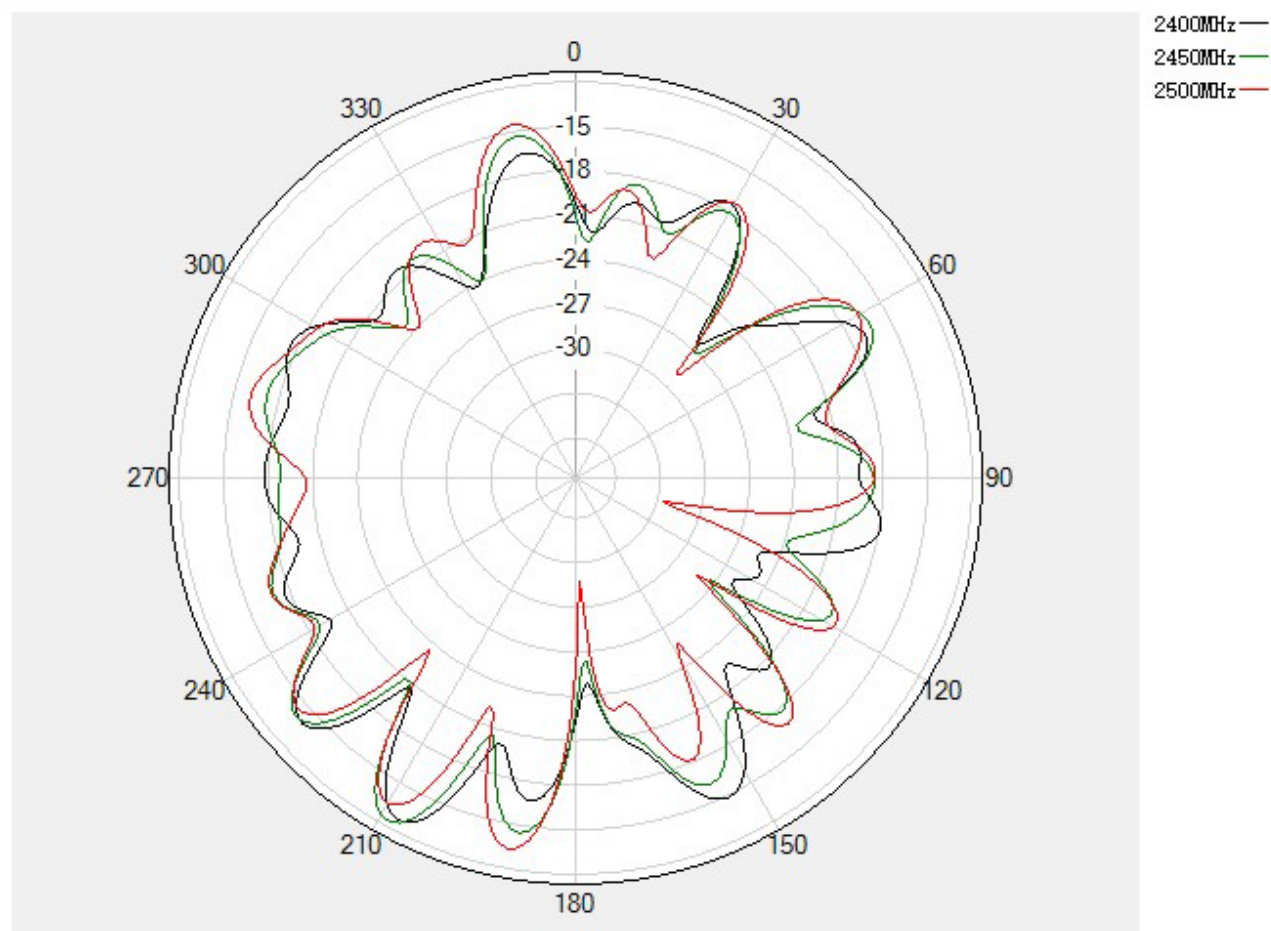
Antenna 2D Radiation Pattern

2400MHz:



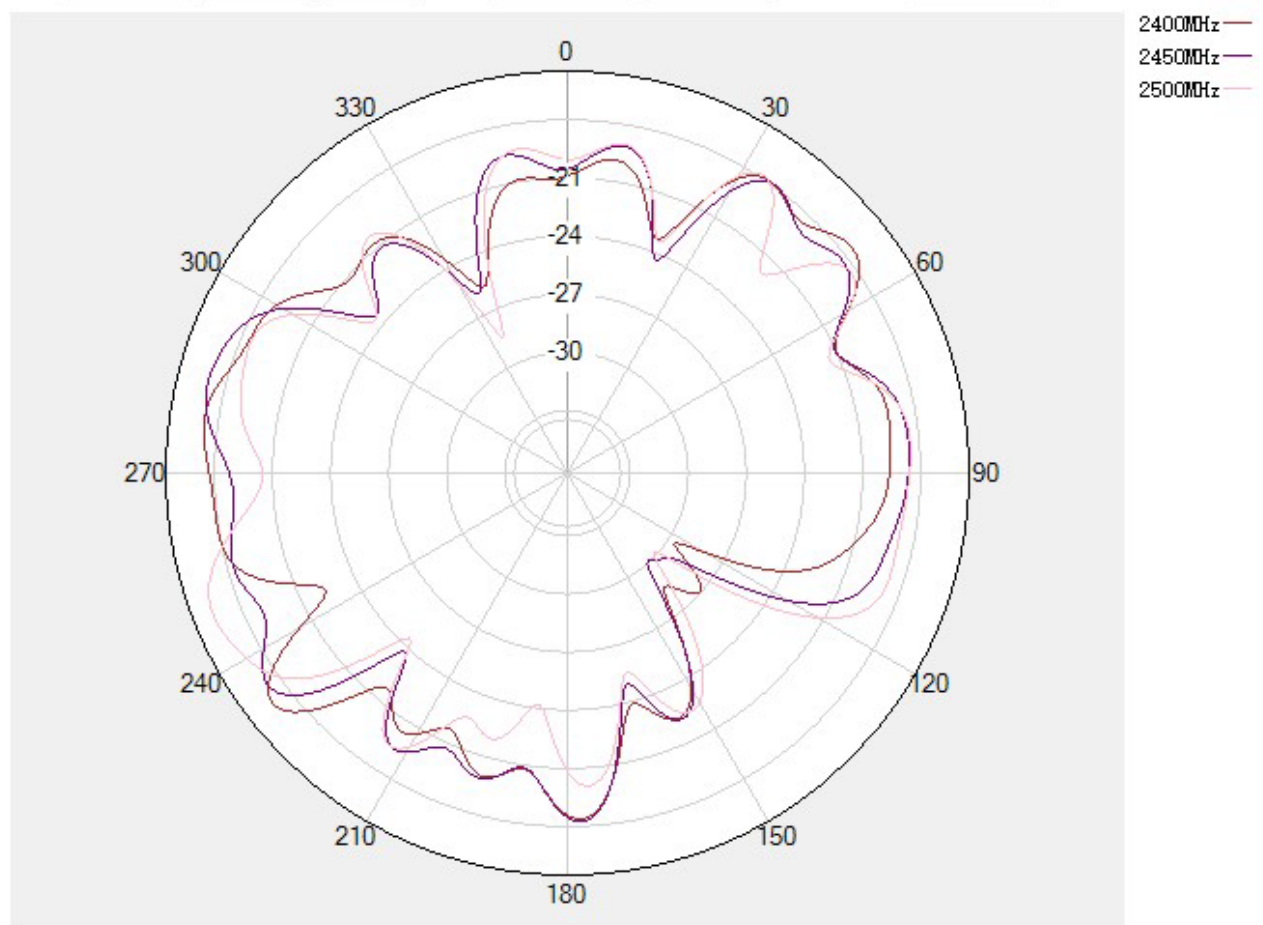
Phi=0 deg

cut **phi** 90 180 type **Etotal** mag ☐ XY/AF **SaveWave** ☐ Cartesian



Phi=90 deg

cut theta 90 180 type Etotal mag ☐ XY/AF SaveWave ☐ Cartesian



Theta=90 deg